

FACT SHEET FOR NPDES PERMIT WA-003212-3

FACILITY NAME: BNSF Railway Company

TABLE OF CONTENTS

INTRODUCTION	4
BACKGROUND INFORMATION	5
DESCRIPTION OF THE FACILITY	5
History.....	5
Site Contamination.....	5
Soils Remediation Zones	6
Description of Levee Zone Cleanup Project Which Begins in the Summer of 2006	7
Excavation Water.....	7
Proposed Treatment and Wastewater Management.....	8
Discharge Outfall.....	8
The Impact and Management of Residential Septic Systems	8
PERMIT STATUS.....	8
WASTEWATER CHARACTERIZATION	9
SEPA COMPLIANCE.....	9
PROPOSED PERMIT LIMITATIONS.....	9
DESIGN FLOW CRITERIA	10
TECHNOLOGY-BASED EFFLUENT LIMITATIONS	10
SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS	11
Numerical Criteria for the Protection of Aquatic Life.....	11
Numerical Criteria for the Protection of Human Health.....	11
Narrative Criteria	11
Antidegradation.....	11
Critical Conditions	12
Description of the Receiving Water.....	12
Surface Water Quality Criteria	12
Whole Effluent Toxicity	14
Human Health	15
Sediment Quality	15
GROUND WATER QUALITY LIMITATIONS.....	16
MONITORING REQUIREMENTS.....	16
EFFLUENT LIMITS BELOW DETECTION.....	16
LAB ACCREDITATION	16
OTHER PERMIT CONDITIONS	16
REPORTING AND RECORD KEEPING	16
SPILL PLAN	16
SOLID WASTE PLAN.....	17
TREATMENT SYSTEM OPERATING PLAN	17
GENERAL CONDITIONS	17

PERMIT ISSUANCE PROCEDURES	17
PERMIT MODIFICATIONS	17
RECOMMENDATION FOR PERMIT ISSUANCE	17
REFERENCES FOR TEXT AND APPENDICES.....	18
APPENDIX A—PUBLIC INVOLVEMENT INFORMATION.....	19
APPENDIX B—GLOSSARY	20
APPENDIX C—SITE MAPS AND PROCESS FLOW DIAGRAMS	24
APPENDIX D—RESPONSE TO COMMENTS.....	32

INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has authorized the State of Washington to administer the NPDES permit program. Chapter 90.48 RCW defines the Department of Ecology's authority and obligations in administering the Wastewater Discharge Permit Program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least 30 days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see [Appendix A—Public Involvement](#) of the fact sheet for more detail on the public notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit, and parties submitting comments will receive a copy of the Department's response. Comments and the resultant changes to the permit will be summarized in [Appendix D—Response to Comments](#).

GENERAL INFORMATION	
Applicant	BNSF Railway Company (BNSF)
Facility Name and Address	BNSF Skykomish Cleanup Site South Bank South Fork of the Skykomish River Skykomish, WA
Type of Facility	Contaminated Soils Remediation
Discharge Location	South Fork of the Skykomish River Latitude: 47° 42' 37" N Longitude: 121° 21' 44" W
Water Body ID Number	1215779478143

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

Skykomish, Washington is located on the west side of the Cascade Mountains, approximately 16 miles west of Stevens Pass. It is reached by means of Highway 2, which follows the South Fork of the Skykomish River. The location of the town and the BNSF Skykomish Cleanup site is shown on Figure 1.

The former railway maintenance and fueling facility in the town of Skykomish is owned and operated by BNSF. Historical activities which have occurred since the facility opened in the late 1890s included refueling and maintaining locomotives and operating an electrical substation for electric engines. These activities released contaminants to the surrounding environment. BNSF has discontinued most fuel handling activities at this site, and the site is currently used as a base of operations for track maintenance and snow removal crews. Former rail yard activities have resulted in contamination of soil, ground water, and sediment along the Skykomish River and in the former channel of Maloney Creek. Currently, petroleum product seeps into the river channel from the base of the existing levee. BNSF has accepted responsibility for cleaning this contamination at the site and is currently working with the Department's Toxic Cleanup Program (TCP) developing a cleanup action plan to remediate the contamination. The entire cleanup site encompasses an area of about 40 acres, which includes the BNSF property and adjacent property. A site-wide Cleanup Action Plan (CAP) is being written by the Department's TCP which will guide all remedial actions at the former railway maintenance and fueling facility. The first cleanup phase involves the in water work on the flood control levee along the south shoreline of the South Fork of the Skykomish River beginning in the summer of 2006, followed with remediation consisting of upland excavation of contaminated soils. The area of the BNSF Skykomish Cleanup site is depicted in Figure 2.

The accompanying NPDES permit addresses the control, treatment, and disposal of wastewater resulting from the excavation activity, prior to discharge to the South Fork of the Skykomish River, and the proper disposal of the excavated contaminated soils on-site.

SITE CONTAMINATION

Investigations performed by BNSF in cooperation with the Department since 1993 have revealed petroleum contamination in soil, ground water, surface water, and sediment along the South Fork of the Skykomish River and in the former channel of Maloney Creek, in excess of the state's cleanup standards. Maloney Creek flows south of BNSF property and west to the South Fork of the Skykomish River.

Soils – Surface soils on the rail yard contain petroleum (diesel and Bunker C fuel oil), lead and arsenic above state cleanup standards. In some areas of the site, including areas off the rail yard property, subsurface soils contain petroleum and its components to an approximate 15-foot depth. PCBs have also been detected within the rail yard at low concentrations.

Ground water – Mixtures of both floating and dissolved diesel and Bunker C fuel oil are present in ground water beneath the site.

Surface water – Petroleum product has been detected in surface water of the Skykomish River.

Sediments – Diesel and Bunker C fuel oil from upland areas are present in the sediment along the riverbank at seep locations and below the former Maloney Creek channel.

Data collected during the site investigations indicate the equivalent of approximately two million gallons of oil is currently contained in the subsurface, both as non-aqueous phase liquid (NAPL), and dissolved in the ground water. Other contaminants include arsenic and lead contamination in shallow surface solids.

SOILS REMEDIATION ZONES

Remediation of the entire contamination area will be conducted by zones as shown on Figure 3:

- Rail Yard Zone – The Rail Yard Zone has been used historically for railroad maintenance and fueling activities. Almost all of the Rail Yard Zone is currently used as a rail transportation corridor. This zone is contaminated with Bunker C and diesel fuel, arsenic and lead which resulted from fueling and sandblast grit operations. The Rail Yard Zone is almost entirely owned by BNSF Railway Company. The Rail Yard zone includes three small areas immediately adjacent to the BNSF property: two with surface soil metal impacts, and one with surface and subsurface soil TPH impacts.
- Northwest (NW) and South Developed Zone – The Northwest and South Developed Zones are used for residential and commercial purposes. They have multiple property owners. They are affected by oil contamination that consists of a mixture of diesel and Bunker C fuel oil. The oil composition is resistant to biodegradation and other treatment technologies. Near surface lead contamination is present in isolated areas of the Northwest Developed Zone.
- Northeast Developed Zone – The Northeast Developed Zone is used for residential and commercial purposes. It has multiple property owners. It is affected primarily by diesel oil. As a result of the greater diesel content, the oil is more soluble and more biodegradable than the petroleum present in the NW and South Developed Zones.
- Levee Zone – The South Fork Skykomish River and Levee provide aquatic habitat, flood protection, and recreational opportunities. They are affected by oil contamination that consists of a mixture of diesel and Bunker C fuel oil. The oil composition is resistant to treatment technologies and biodegradation.
- Former Maloney Creek Zone – The former Maloney Creek Channel and associated wetland provide aquatic habitat, stormwater detention, and recreational opportunities. The creek and wetland are affected by oil contamination that consists of a mixture of diesel and Bunker C fuel oil. The oil composition is resistant to treatment technologies and biodegradation.

DESCRIPTION OF LEVEE ZONE CLEANUP PROJECT WHICH BEGINS IN THE SUMMER OF 2006

The first remediation phase involves temporary relocation of five residences, excavation of the levee, underlying soils and sediments along the south bank of the South Fork of the Skykomish River within approximately 135 feet of the shoreline, reconstruction of the levee, and restoration of natural resources, private property and public infrastructure that are disturbed by the remedial action. The levee cleanup zone is shown on Figure 4A and B. The in-water portion of the levee work will begin in early July and end no later than mid-September 2006, which comprises the ten-week fish window. The remediation includes clearing, grading, excavating, filling, and construction of the new levee. The existing levee extends from the south base of the 5th Street Bridge, downstream approximately 640 feet along the shoreline. The project area will also extend into the river channel to the extent that is necessary to efficiently remove and replace the existing levee structure and remove any contaminated material. All contaminated soils will be hauled off-site for proper disposal, and backfilled with clean soils.

A primary temporary river exclusion wall (cofferdam) will be placed waterward of the proposed excavated prism. The cofferdam will be placed within the south portion of the river channel and will prevent water from entering the construction site in the event of high flows. The wall will also exclude migrating fish from entering the construction area. A second cofferdam will be located just beyond the primary cofferdam to provide secondary containment to ensure that soil, sediment, and organic contaminants are not released to the river. Tertiary containment will consist of oil absorbent booms placed outside of the second cofferdam. Water within the first and second cofferdams will be pumped to a containment tank for treatment. Continuous pumping of water within the first cofferdam may be necessary to create a gradient toward the excavation pit, and away from the river or surface water.

Upland source control will be implemented to prevent future migration of contaminants into the levee zone following cleanup. Source control will consist of a sheet pile wall used for shoring the southern face of the excavation to form a physical barrier. This work will be overseen by the Department's TCP.

EXCAVATION WATER

Dewatering water will be generated during excavation of petroleum-contaminated soils from the site. Water that pools in the excavation zone will be removed, as needed, to aid excavation of contaminated soil. Contaminated water collected during excavation work will be primarily ground water and surface water from South Fork of the Skykomish River that enters the excavation as groundwater seepage during the levee cleanup. This water will contain contaminants associated with the historic petroleum releases in the upland areas that have migrated to the river. The water will be treated to meet the permit limits and conditions prior to discharge to the Skykomish River.

PROPOSED TREATMENT AND WASTEWATER MANAGEMENT

Contaminated water is proposed to be treated through gravity separation (sedimentation/oil-water separation), chitosan-enhanced sand filtration, and granular-activated carbon adsorption. BNSF proposes to employ two treatment trains, each consisting of two sedimentation/oil-water separation tanks, four automatic back-flush sand filters, and two 10,000 pounds each of granular activated carbon columns, as shown in Figure 5. The maximum discharge rate for operating two treatment trains is 1000 gpm, or 500 gpm each. BNSF proposes to operate both treatment trains in parallel if treatment capacity of greater than 500 gpm is required.

DISCHARGE OUTFALL

Treated water will be discharged to the Skykomish River by means of temporary HDPE discharge pipe located in the approximate location as shown in Figure 4B. The discharge end of the pipe and the energy dissipation structure (see Figure 6) will be positioned in the river such that the discharge is to a point in the river in which there is flow. The purpose for the energy dissipation structure is to de-energize the water before it merges with the river, thereby eliminating sediment scour and the resultant turbidity.

RESIDENTIAL SEPTIC SYSTEMS

The Town has hired a firm to develop a combined General Sewer Plan and Facility Plan. The plans contain a determination of the viability of the proposal to use the airfield to accommodate a community sewer system including a drain field, and will identify the type and cost of a system needed to accommodate properties both within the cleanup zone, and the remaining properties in the Town. The plan will also include an analysis of additional capacity for future growth. The Facility Plan will include a hydrogeological investigation and evaluation to determine if the proposed use of the perimeter of the airfield is a feasible disposal site adequate for disposed of the daily volume of treated wastewater. If the site is determined to be inadequate, the firm will propose and evaluate another method of effluent disposal.

Upon receiving the Department's approval, a Sewer Construction Design Plan for the community will be developed. The Department has contributed funding for the development of the combined General Sewer Plan and Facility Plan for the Town. A King County Community Block Grant may be available for use in the construction phase of the project.

As part of the cleanup action in the Levee Zone, it will be necessary for individual septic systems to be replaced. Although permitted on a temporary basis, the engineering and design will be consistent with requirements for a typical permanent system. The Department has coordinated with King County to ensure that the temporary on-site septic permits will remain in effect until a permanent system is available for connection, as long as the temporary system is operated as designed and in accordance with the on-site septic permit requirements. Property owners within the cleanup zone are not liable for the cost of site cleanup and thus will not be held responsible for the cost of replacing the septic systems on their property.

PERMIT STATUS

This is a new, previously unpermitted facility. The Permittee submitted to the Department a draft engineering report for the levee remediation cleanup dated July 20, 2005; an application for a permit on October 4, 2005; and supplemental information on November 9, 2005. The Department accepted the permit application on January 4, 2006.

WASTEWATER CHARACTERIZATION

The proposed wastewater discharge is characterized for the following regulated parameters:

Table 1: Wastewater Characterization

Parameter	Maximum Concentrations Reported for Groundwater	Maximum Concentrations Reported for Soil
Benzene	631 µg/L	9860 µg/kg
TPH ¹	5040 µg/L	765000 mg/kg
Lead	310 µg/L	1300 mg/Kg
Anthracene	42.6 µg/L	80 µg/kg
Fluorene	92.8 µg/L	970 µg/kg
Naphthalene	32 µg/L	8.9 µg/kg
Pyrene	1430 µg/L	6800 µg/L
Benzo(a)anthracene	385 µg/L	1800 µg/kg
Benzo(b)fluoranthene	112 µg/L	540 µg/kg
Benzo(k)fluoranthene	17.1 µg/L	1400 µg/kg
Benzo(a)pyrene	37.5 µg/L	1400 µg/kg
Chrysene	1120 µg/L	5300 µg/kg
Dibenzo(a,h)anthracene	8.57 µg/L	243 µg/kg
Indeno(1,2,3-cd)pyrene	4.53 µg/L	591 µg/kg
Acenaphthene	631 µg/L	3700 µg/kg
Fluoranthene	138 µg/L	2920 µg/kg
Arsenic	820 µg/L	330 mg/kg

¹Total petroleum hydrocarbons.

SEPA COMPLIANCE

BNSF submitted a SEPA Scoping and Final Draft Environmental Impact Analysis on August 14, 2003. The Department issued a Determination of Significance (DS) for the levee cleanup action in Skykomish in January 2006 stating that an Environmental Impact Statement (EIS) is required. A draft EIS will be prepared by BNSF under the Department's TCP supervision. That document will provide an impartial discussion of significant environmental impacts, and mitigation measures that would avoid or minimize significant adverse impacts that the proposed levee cleanup action is likely to have on the natural and built environment. The EIS will be published for public notice in March 2006.

PROPOSED PERMIT LIMITATIONS

Federal and state regulations require that effluent limitations set forth in an NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (40 CFR 131.36). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application, the feasibility study, data and related documents submitted by the facility for this cleanup site. The effluent constituents for the proposed wastewater were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. The Department does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, or do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. In such a case, the Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

DESIGN FLOW CRITERIA

In accordance with WAC 173-220-150(1)(g), flows or waste loadings shall not exceed approved design criteria. BNSF submitted a draft engineering report for the Levee Remediation Process Water Treatment and Discharge on July 20, 2005, which was reviewed, and commented on, by the Department. Comments were provided to the RETEC Group, Inc. (BNSF's consultants) by the Department during a meeting on August 1, 2005. A supplement to the engineering report was submitted to the Department on November 9, 2005. The proposed design flow criterion for each treatment train is 500 gpm (see Figure 5), based on the discharge pump design (P-6A, as shown on Figure 5). The facility proposes to add on an identical treatment train to increase the flow rate to 1,000 gpm, if it is necessary. Therefore, the flow limits proposed in this permit are as follows:

Number of Treatment Train	Discharge Flow Rate
Treatment Train No. 1	500 gpm
Treatment Train No. 2	500 gpm

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Technology-based limitations are set by regulation in the federal effluent guidelines or on a case-by-case basis using best professional judgment (BPJ) when no effluent guidelines exists for an industrial category. Technology-based limits represent the best treatment a facility can achieve consistent with the economic means of the industry as a whole (in the case of effluent guidelines) or of the specific facility being permitted (in the case of BPJ).

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established surface water quality standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) and the Cleanup Levels and Risk Calculations (CLARC) developed under the Model Toxics Control Act (MTCA) Cleanup Regulation (Chapter 173-340 WAC) are state regulations designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin-wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in the receiving water while remaining protective of aquatic life. Numerical criteria set forth in the water quality standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other diseases and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the state of Washington.

ANTIDEGRADATION

The State of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall be protected. More information on the Washington State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic waterbody uses.

Mixing Zones

The water quality standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

No mixing zone has been granted for this discharge at this time. However, if BNSF demonstrates that AKART and BMPs have been fully implemented but still cannot meet the water quality standards, the Permittee may request a mixing zone. The condition of the receiving water (South Fork of the Skykomish River) with respect to compliance with surface water standards and the effluent limits listed in S1 of the permit will be a significant factor of that determination.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to the South Fork of the Skykomish River which is designated as a Class AA receiving water in the vicinity of the outfall. Characteristic uses include the following:

water supply (domestic, industrial, agricultural); stock watering; fish migration; fish and shellfish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation. Water quality of this class shall markedly and uniformly exceed the requirements for all or substantially all uses.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, Method B surface water cleanup levels presented in the Cleanup Levels and Risk Calculations (CLARC) were developed under the MTCA Cleanup Regulation, Chapter 173-340 WAC. Criteria for this discharge are summarized below:

PARAMETER	MAXIMUM DAILY LIMITATION
pH ^a	Not outside the range of 6.5 to 8.5 standard units
Oily Sheen ^a	No visible sheen
Dissolved Oxygen ^a	Minimum 8 mg/L
Turbidity	5 Nephelometric turbidity units (NTU)
BTEX ^b	100 µg/L
Total Petroleum Hydrocarbon (TPH ^c)	208 µg/L
Total Recoverable Lead ^a	17.5 µg/L
Arsenic ^a	360 µg/L
Anthracene ^d	2,400 µg/L
Fluorene ^d	640 µg/L
Naphthalene ^d	160 µg/L
Pyrene ^d	480 µg/L
Chitosan Acetate ^e	0.1 mg/L

^a Effluent limits are based on water quality criteria, Chapter 173-201A WAC. The effluent limit for lead is based on the hardness (as CaCO₃) concentration of 15.6 mg/L, which is the average concentration resulting from two receiving water samples collected by the Department on October 15, 2004. Based on this hardness concentration, the acute freshwater criterion for lead (dissolved) is 8.14 µg/L. The total recoverable value is calculated by dividing the dissolved criteria by the conversion factor (0.466). Therefore, the effluent limit for lead expressed in total recoverable is 17.5 µg/L.

^b Effluent limits are based on Cleanup Levels and Risk Calculations (CLARC) under the Model Toxics Control Act Cleanup Regulation.

^c This specific Cleanup Level (CUL) represents the maximum TPH concentration permissible in surface water to prevent recontamination of sediment. It was derived by the EPA Equilibrium Partitioning Model for Sediment, using percentages of equivalent hydrocarbon ranges derived from a sediment sample analyzed by volatile and extractable petroleum hydrocarbons (VPH/EPH) methodology. It protects against sediment recontamination above the TPH CUL for sediment of 40.9 mg/kg TPH, as determined by the NWTPH-Dx analytical method.

^d Effluent Limits are based on Drinking Water 720 Method B (WAC 173-340-730 (3)(b)(iv)). For surface waters that are classified as suitable for use as a domestic water supply under Chapter 173-201A WAC, concentrations were derived using the methods specified in WAC 173-340-720 for drinking water beneficial uses.

^e The threshold for chitosan acetate toxicity to the most sensitive species, rainbow trout, is 1.2 mg/L. If no more than 1 mg/L of chitosan acetate is dosed at a time into a treatment system, the toxic threshold for trout is not expected to be reached because chitosan binds to solids causing its concentration to begin to decrease immediately. A chitosan concentration of 1 mg/L is adequate for treating up to 600 NTU of turbidity. When turbidity exceeds 600 NTU, the treatment must be done in two steps so that the turbidity at the second step is conducted using between 50 and 600 NTU. The chitosan dose rate at the second step is recommended

from 0.26 mg/L to 1 mg/L in order to meet the 5 NTU limit without any carry-over of chitosan into the discharge. The toxic threshold for trout is not expected to be reached as long as the dose rate at the second step is no more than 1 mg/L. It is recommended that 0.26 mg/l chitosan acetate be used to treat influent with turbidity level from 50 to 200 NTU, 0.53 mg/L be used to treat turbidity level of 200 to 400 NTU, and that 1 mg/L be used to treat turbidity levels of 400 to 600 NTU. These guidelines are based on the operational plan generated by the Natural Site Solutions chitosan enhanced sand filtration system, as a part of its evaluation and approval process. Procedures for toxicity testing to determine a safety margin and preparation of an intended use plan are contained in Appendix G of the Department of Ecology Publication WQ-R-95-80, which is available at <http://www.ecy.wa.gov/programs/wq/wet>.

WHOLE EFFLUENT TOXICITY

The water quality standards for surface waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore, this approach is called whole effluent toxicity (WET) testing.

The facility conducted whole effluent toxicity testing on groundwater at the project site in December 2002. Samples were collected from monitoring wells MW-41, MW-45, 1A-W3 (adjacent to western LNAPL plume), and 1C-W-1 (adjacent to eastern plume). The location of these monitoring wells is shown on Figure 2. The results indicate that samples from MW-41 and MW-45 had significant reduction effects on fathead minnow survival and growth. In summary, dissolved TPH in groundwater showed significant toxicity for ecological resources only within and near the western light non-aqueous phase liquid (LNAPL) plume. Toxicity was limited to the fathead minnow, with no effect evident for Ceriodaphnia.

The groundwater samples collected for the above toxicity test were not treated prior to testing. The proposed discharge to Skykomish River will be treated with oil/water separation, chitosan, and activated carbon treatment.

The above-mentioned WET testing results were used to estimate that a TPH concentration of no greater than 700 µg/L NWTPH-D_x is protective of fresh water organisms. The effluent limit for TPH proposed in this permit is 208 µg/L, which was derived based on the protection of recontamination of sediment in the river. The Department has determined that compliance with this TPH limit of 208 µg/L would not cause adverse effects on the protection and propagation of wildlife, fish, and other aquatic life. Therefore, no whole effluent toxicity testing is required in this permit. The Department may require effluent toxicity testing in the future if it receives information that toxicity may be present in this effluent.

If the Permittee alters the treatment methods which, in the Department's opinion, results in an increased potential for effluent toxicity, then the Department may require additional effluent characterization in a regulatory order, by permit modification, or in the permit renewal. Toxicity is assumed to have increased if WET testing conducted in response to rapid screening tests fails to meet the performance standards in WAC 173-205-020 "whole effluent toxicity performance standard."

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the effluent is likely to have chemicals of concern for human health. This determination is based on the Department's knowledge of data or process information indicating regulated chemicals occur in the discharge. Therefore, effluent limits for those chemicals will be placed in the permit. The resultant human health-based effluent limits are as follows:

PARAMETER	MAXIMUM DAILY LIMITATION
Benzene	1.2 µg/L
Benzo(a)anthracene ^b	0.0028 µg/L
Benzo(b)fluoranthene ^b	0.0028 µg/L
Benzo(k)fluoranthene ^b	0.0028 µg/L
Benzo(a)pyrene ^b	0.0002 µg/L
Chrysene ^b	0.0028 µg/L
Dibenzo(a,h)anthracene ^b	0.0028 µg/L
Indeno(1,2,3-cd)pyrene ^b	0.0028 µg/L
Acenaphthene ^a	643 µg/L
Fluoranthene ^a	90.2 µg/L

^a Effluent Limits are based on human health for fish consumption for non-carcinogens.

^b The method detection level (MDL) for these PAH compounds is above the effluent limits using the approved analytical test method EPA 8270C-HVI. The reporting level (RL) for these compounds has been reported as 0.01 µg/L. Therefore, these RLs will be used for assessment of compliance with these effluent limits. These RLs will be referred to as enforcement limits in this permit.

SEDIMENT QUALITY

The Department has promulgated Aquatic Sediment Standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined the specific cleanup level (CUL) established for TPH (208 µg/L) for the discharge represents the maximum TPH concentration permissible in surface water to prevent recontamination of sediment. It was derived by the EPA Equilibrium Partitioning Model for Sediment, using percentages of equivalent hydrocarbon ranges derived from a sediment sample analyzed by volatile and extractable petroleum hydrocarbons (VPH/EPH) methodology. It protects against sediment recontamination above the TPH CUL for sediment of 40.9 mg/kg TPH, as determined by the NWTPH-Dx analytical method. If the Permittee complies with this TPH limit and other effluent limits proposed in this permit, it is anticipated that the discharge has no reasonable potential to violate the sediment management standards.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

The Permittee proposes to discharge to a surface water and not to ground water. Therefore, no limitations are required based on potential effects to ground water.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

EFFLUENT LIMITS BELOW DETECTION

The water quality-based effluent limits for Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, and total PCB in the wastewater are below the capability of current analytical technology to detect. The Method Detection Level (MDL) is the minimum concentration of an analyte that can be measured and reported with a 99 percent confidence that its concentration is greater than zero as determined by a specific laboratory method. Therefore, for compliance purposes, an enforcement limit for these parameters has been developed as five times its individual detection limit for those specified analytical test method listed in S2 of the permit. The enforcement limits for these parameters are listed in the footnote of S1 of the permit.

LAB ACCREDITATION

With the exception of certain parameters, the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*.

OTHER PERMIT CONDITIONS

REPORTING AND RECORD KEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and record keeping requirements to prevent and control waste discharges (WAC 173-220-210).

SPILL PLAN

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under Section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The proposed permit requires the Permittee to develop and implement a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs.

The Permittee has developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update this plan and submit it to the Department.

SOLID WASTE PLAN

The Department has determined that the Permittee has a potential to cause pollution of the waters of the state from leachate of solid waste.

This proposed permit requires, under authority of RCW 90.48.080, that the Permittee develop a solid waste plan to prevent solid waste from causing pollution of waters of the state. The plan must be submitted to the local permitting agency for approval, if necessary, and to the Department.

This proposed permit requires, under the authority of RCW 90.48.080, that the Permittee update as necessary the solid waste plan designed to prevent solid waste from causing pollution of the waters of the state.

TREATMENT SYSTEM OPERATING PLAN

In accordance with state and federal regulations, the Permittee is required to take all reasonable steps to properly operate and maintain the treatment system (40 CFR 122.41(e)) and WAC 173-220-150 (1)(g). An operation and maintenance manual will be submitted as required by state regulation for the construction of wastewater treatment facilities (WAC 173-240-150). It has been determined that the implementation of the procedures in the Treatment System Operating Plan is a reasonable measure to ensure compliance with the terms and limitations in the permit.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary, to meet water quality standards for surface waters, sediment quality standards, or water quality standards for ground waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the state of Washington. The Department proposes that this proposed permit be issued for a period of five (5) years.

REFERENCES FOR TEXT AND APPENDICES

Draft Engineering Report – Levee Remediation Process Water Treatment and Discharge submitted by BNSF on July 20, 2005, and Supplemental Information on December 20, 2005.

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

EPA NPDES Permit Application Form 1 and 2D

The permit application was submitted by BNSF on October 3, 2005.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

Washington State Department of Ecology.

Laws and Regulations (<http://www.ecy.wa.gov/laws-rules/index.html>)

Permit and Wastewater Related Information

(<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(E2). (Cited in EPA 1985 op.cit.)

APPENDIX A—PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to issue a permit to the applicant listed on page one of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

This permit is necessary as part of a larger agency action by the Toxics Cleanup Program under the Model Toxics Control Act (MTCA). The public involvement requirements for this permit will be coordinated with the schedule of the overall cleanup project. Concurrent with the comment period on the NPDES permit to be issued by the Water Quality Program, will be a comment period on all the orders, legal authorizations, and determinations pertaining to the cleanup action by the Toxics Cleanup Program. Comments received by the Water Quality Program regarding the permit will be compiled with comments received by the Toxics Cleanup Program. The Water Quality Program will respond to all comments regarding the permit. Responses to the permit comments will be incorporated into the response to comments for the overall cleanup project.

Public Notice of Application (PNOA) was published on February 17, 2006, and February 24, 2006, in the *Seattle Times* and *Everett Herald* to inform the public that an application had been submitted and to invite comment on the issuance of this permit.

The Department published a Public Notice of Draft (PNOD) on March 7, 2006, in the *Seattle Times* and *Everett Herald* to inform the public that the draft permit and fact sheet were available for review. Interested persons were invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents were available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments were mailed to:

Water Quality Permit Coordinator
Department of Ecology
Northwest Regional Office
3190 – 160th Avenue SE
Bellevue, WA 98008-5452

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30)-day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

A public meeting has been scheduled for ***Tuesday, March 14, 2006, at 6:00 pm, at the Skykomish Community Center, 208 Railroad Avenue, Skykomish.***

Further information may be obtained from the Department by telephone, (425) 649-7201, or by writing to the address listed above.

This permit and fact sheet were written by Jeanne Tran, P.E.

APPENDIX B—GLOSSARY

Acute Toxicity—The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

AKART—An acronym for “all known, available and reasonable methods of treatment.”

Ambient Water Quality—The existing environmental condition of the water in a receiving water body.

Ammonia—Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation—The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)—Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅—Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass—The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine—Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity—The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)—The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance Inspection - Without Sampling—A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling—A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample—A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots).

Construction Activity—Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building; construction of residential houses, office buildings, or industrial buildings; and demolition activity.

Continuous Monitoring—Uninterrupted, unless otherwise noted in the permit.

Critical Condition—The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor—A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10 percent by volume and the receiving water 90 percent.

Engineering Report—A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria—Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample—A single sample or measurement taken at a specific time or over as short a period of time as is feasible.

Industrial Wastewater—Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business; from the development of any natural resource; or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Major Facility—A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation—The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)—The minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility—A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone—An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)—The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

pH—The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)—A calculated value five times the MDL (method detection level).

Responsible Corporate Officer—A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Technology-based Effluent Limit—A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)—Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

State Waters—Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater—That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Upset—An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit—A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C—SITE MAPS AND PROCESS FLOW DIAGRAMS

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at <http://www.ecy.wa.gov>.

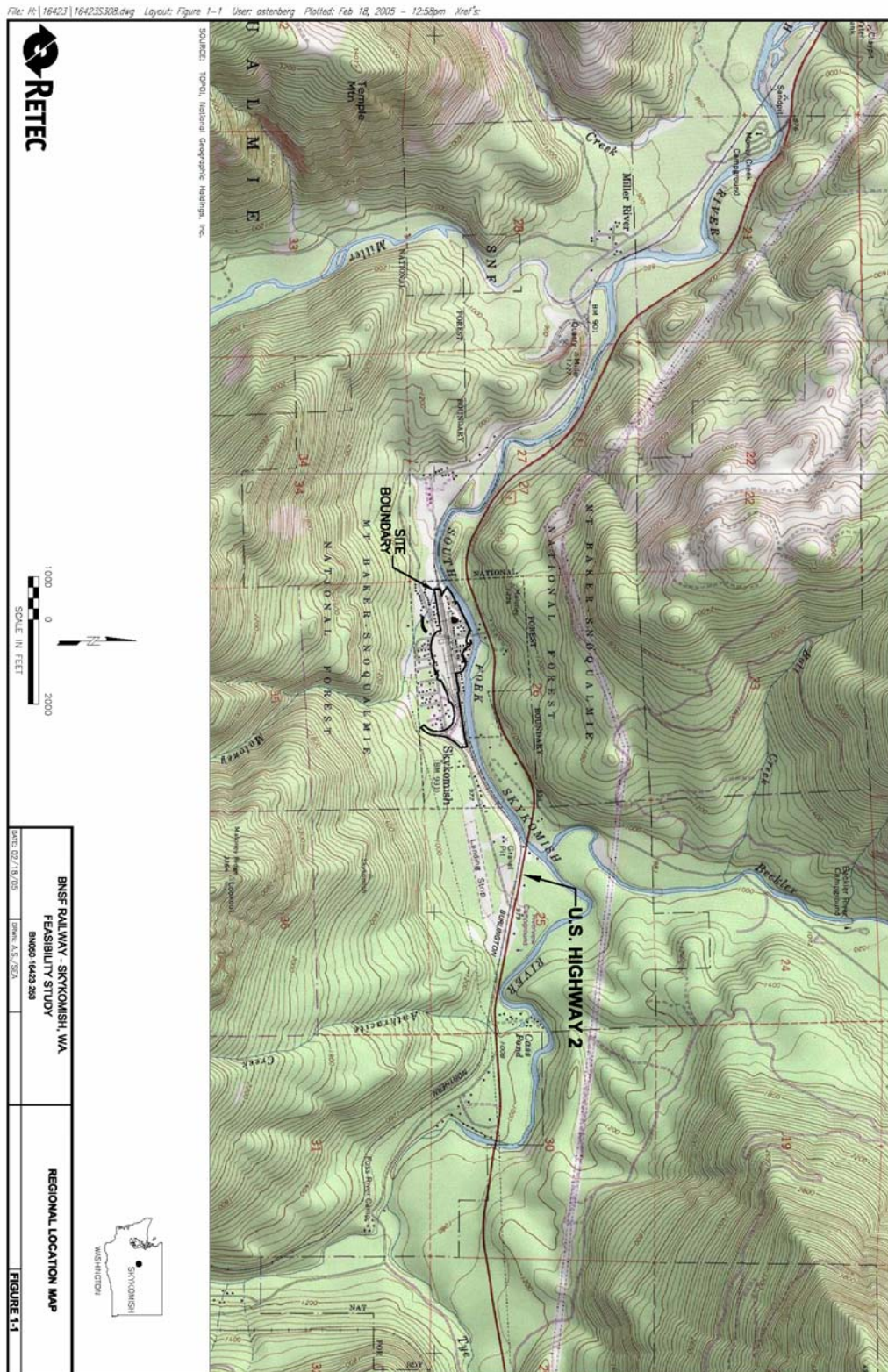
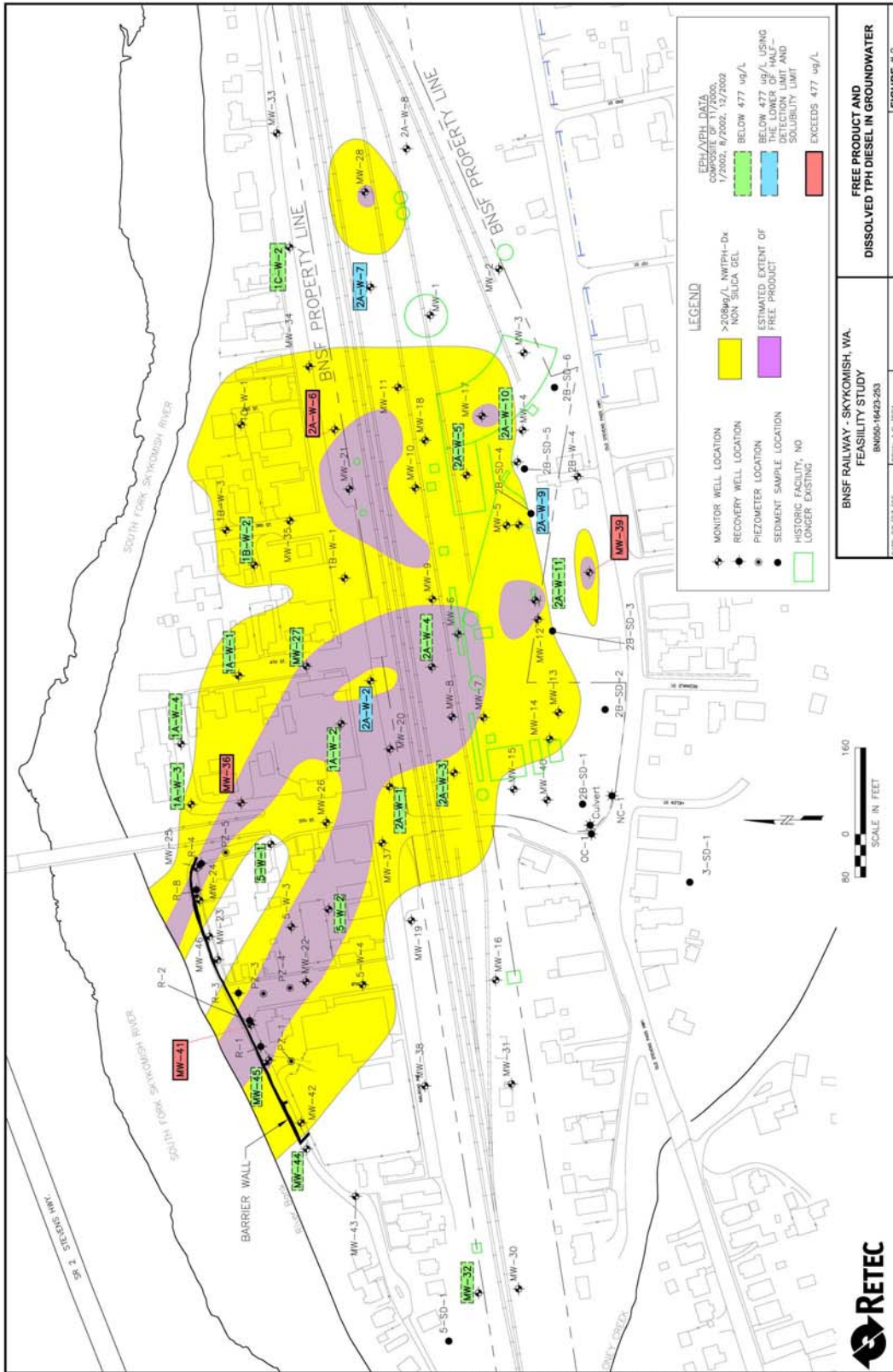
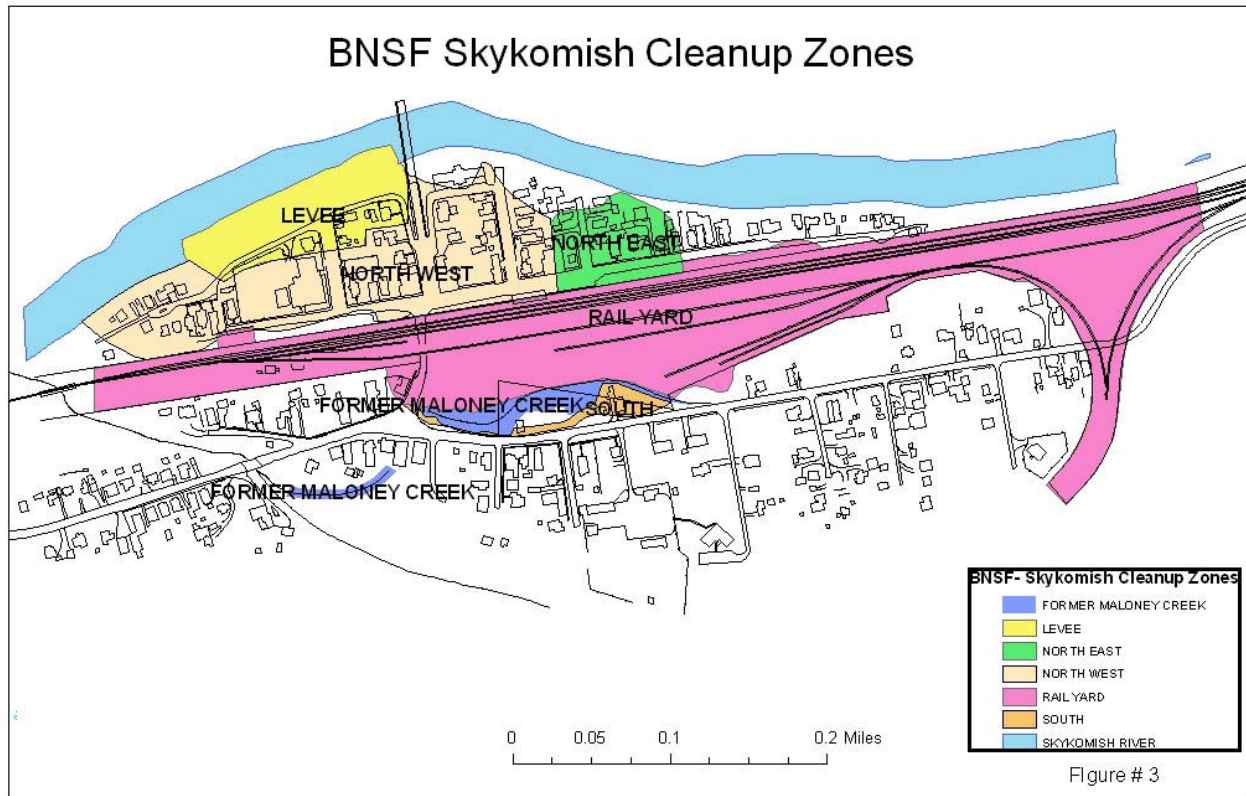
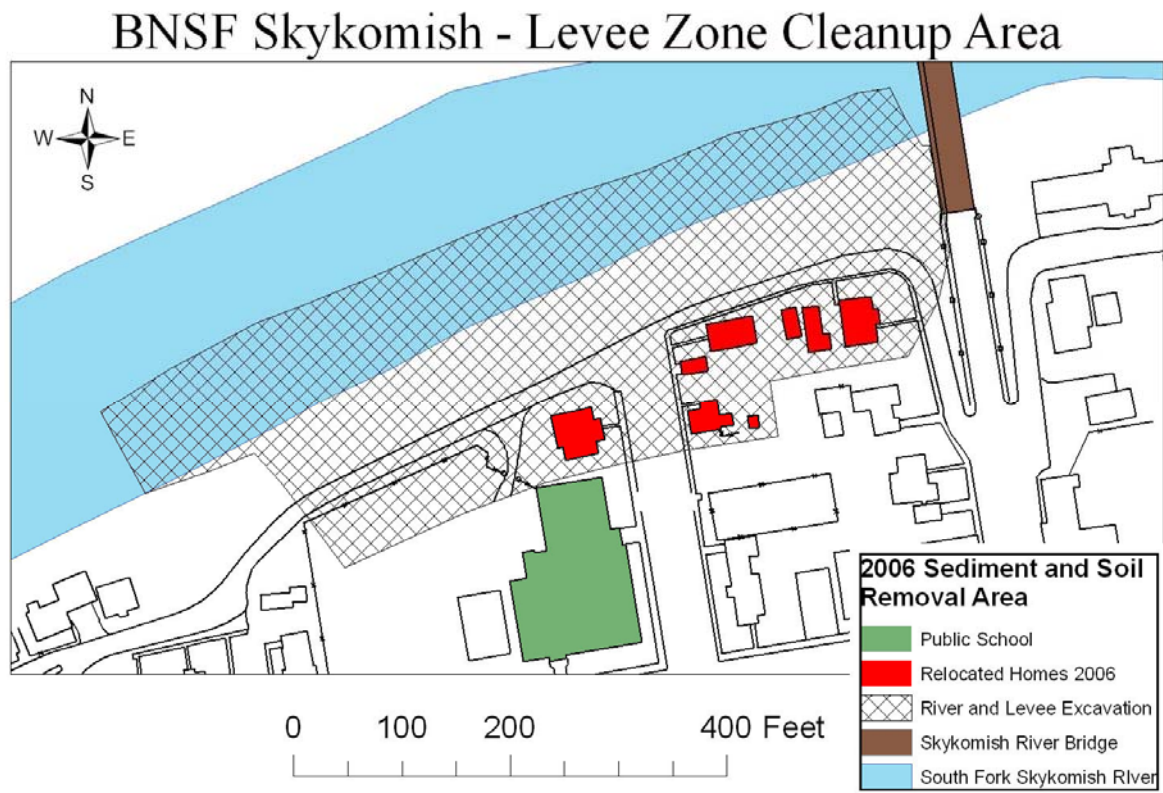
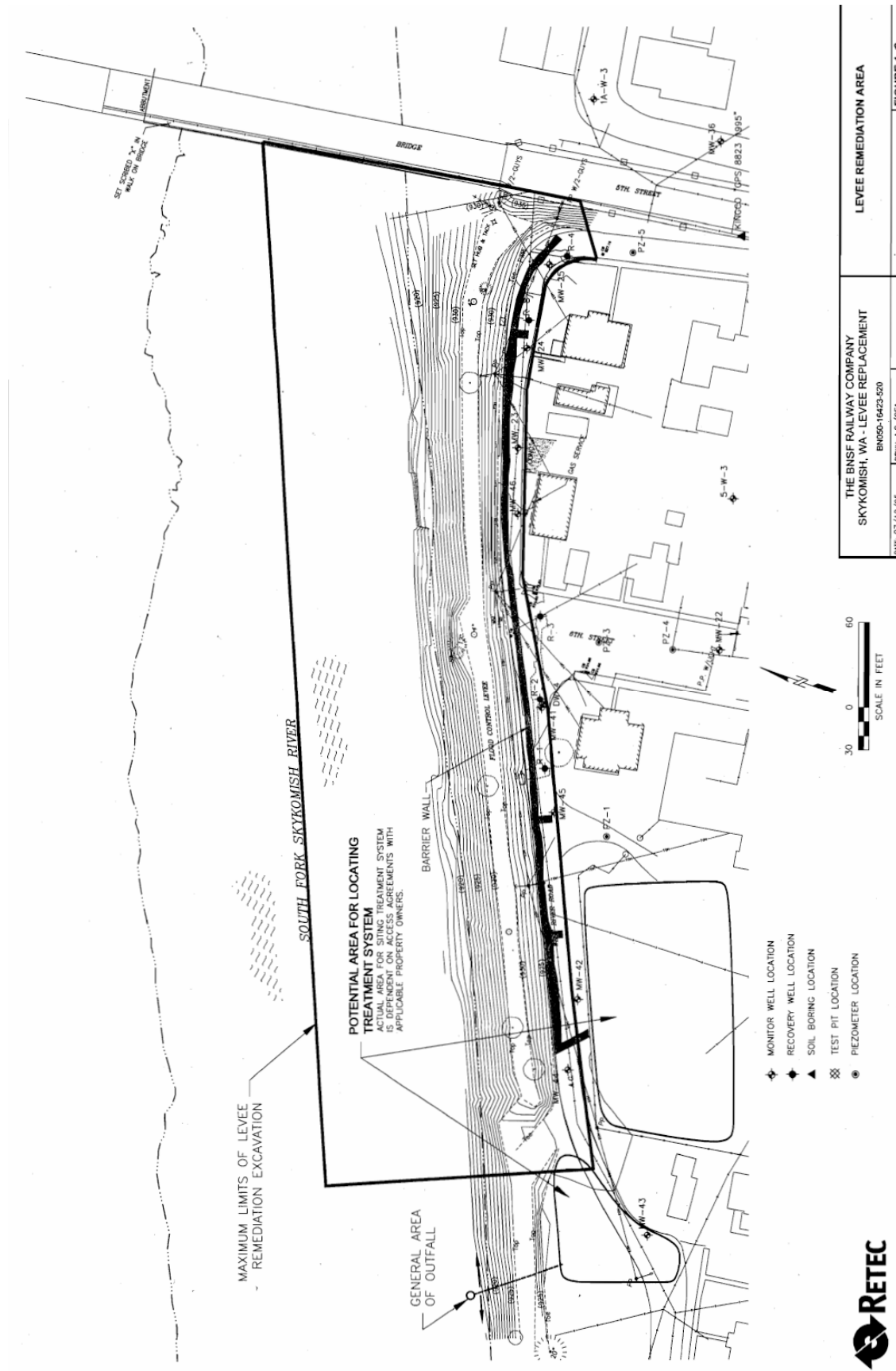


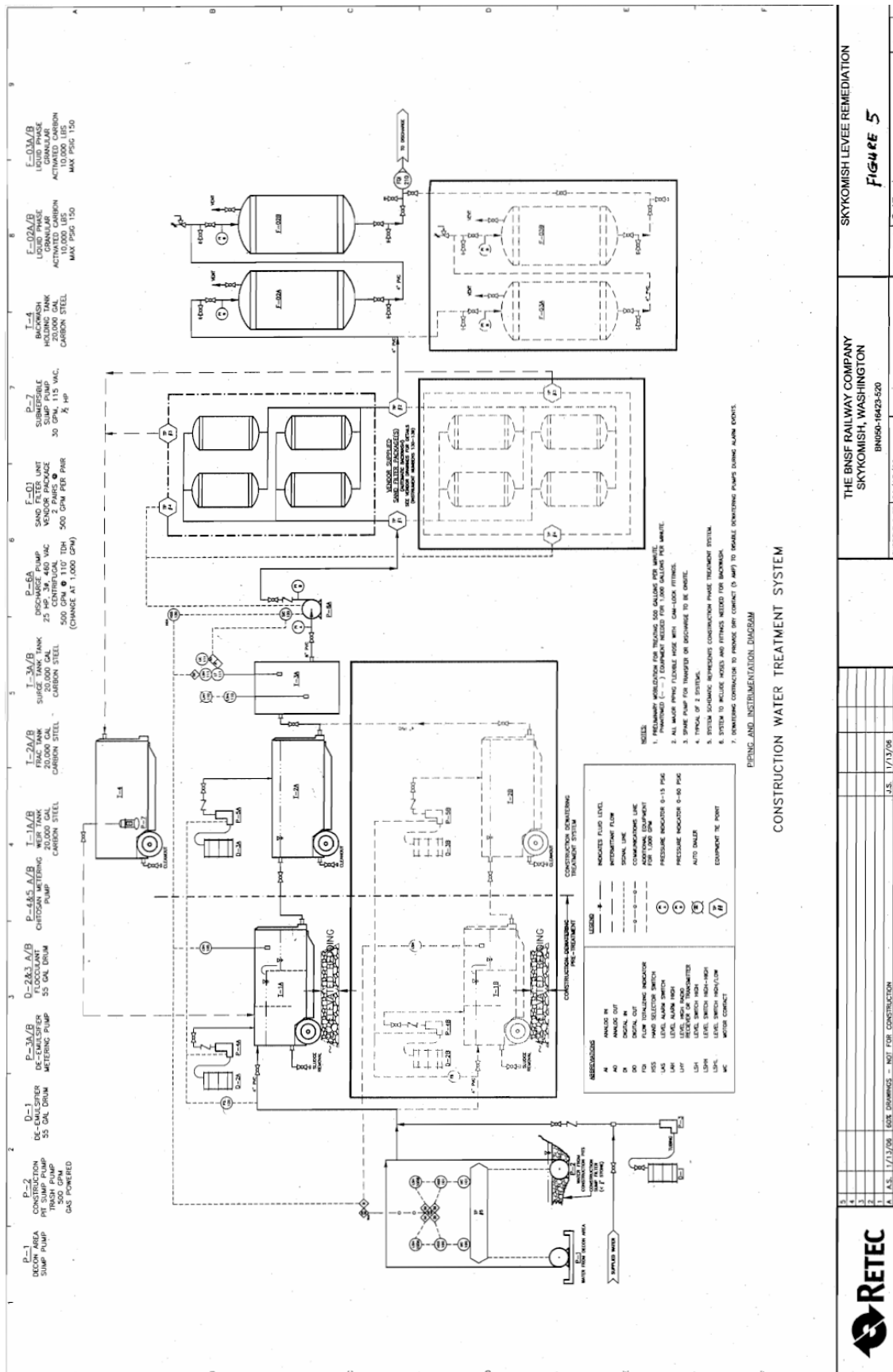
Figure 1 - Vicinity Map-BNSF Railway Company

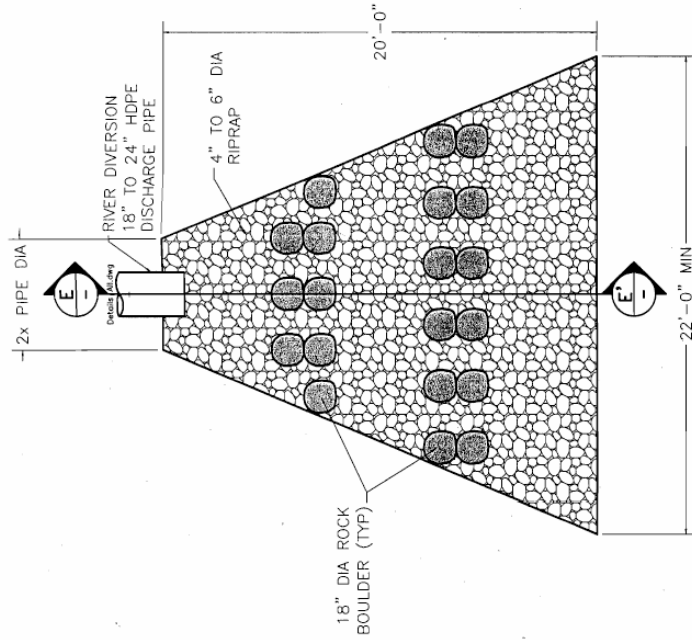




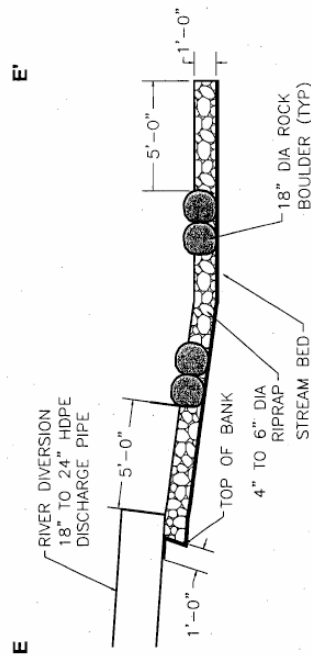








ENERGY DISSIPATION STRUCTURE
SCALE= NTS



THE BNSF RAILWAY COMPANY
SKYYKOMISH, WA - LEVEE REPLACEMENT
BNSF-16423-520

DATE: 07/12/05 DRAWN: A.S./SEA

ENERGY DISSIPATION
STRUCTURE DETAIL

FIGURE 6

APPENDIX D—RESPONSE TO COMMENTS

NPDES Permit No. WA-003212-3

March 3, 2007 Draft NPDES Permit

BNSF Railway Company (BNSF)

Comments on Permit:

1. S1.E. Untreated Overflow

We do not understand how "90% storage capacity" of the excavation pit would be determined. We are required to maintain hydraulic control inside the excavation pit, not less than 90% capacity.

2. S1.G Outfall Location

BNSF will position the outfall pipe to discharge treated water directly into the river at a location that has flow exceeding the discharge flow. Under this circumstance, and given the rocky nature of the riverbed substrate at the anticipated outfall location, the construction of an energy dissipation structure as shown in the Engineering Report may not be necessary.

3. S2.A Monitoring Requirements

The table calls for monitoring benzene and BTEX with separate sample grabs and by separate analyses. Further, the table specifies that BTEX be analyzed by Method SW8270 or EPA 624 the former of which is for analysis of semivolatile organics (not volatiles) and the latter of which is a prescriptive and largely obsolete method for analyzing volatiles relative to SW8260B. BNSF suggests consolidating the benzene and BTEX requirement into one with analysis by SW8260B.

The table calls for weekly monitoring of TPH and PAH compounds. These two parameters are not unrelated insofar as origin and treatment are concerned. Site data collected during the RI/FS indicate that when groundwater TPH is at or below the cleanup level of 208 ug/l, so too are the PAH compounds below cleanup levels. This relationship should also be true and more reliably so in terms of treatment system performance. BNSF requests that Ecology include a provision in the permit that allows for a reduction of weekly PAH monitoring to monthly should the monitoring database from this first phase of remediation (i.e., levee remediation) clearly support TPH as a surrogate for PAH.

Footnote "a" calls for internal process control sampling and analysis of TPH for determining when to change out carbon in the GAC columns. The 90% removal rate provision in the footnote is often impractical. BNSF recommends internal process monitoring across the first GAC column to determine when the media in the first column is saturated with organics. This is determined when there is no change between influent and effluent concentrations. The time to "breakthrough" (i.e., first detection of TPH above reporting limits) for the first column will provide a gauge on anticipated breakthrough for the second column and therefore a basis for determining whether carbon change-out will be required to complete the ongoing phase of remediation. The GAC columns are sized for the hydraulic load and the organic load and are generally not expected to need carbon change-out during this given phase of remediation. BNSF anticipates demobilizing the treatment system after each phase of remediation such that when remobilized, the GAC columns will be loaded with a fresh batch of carbon. In summary, change-out decisions should be based on time and contaminant loading before breakthrough and whether the system has sufficient sorptive capacity to cover the balance of the remediation phase underway at any given time.

4. General Comment

In reviewing the permit, we have noted several plans that are required and their due dates. We would like to consolidate some of the plans as follows:

Plan Document	Date Due	Comments
O&M Manual	Submit to Ecology 30 days following permit issuance	No change proposed
SWPPP	Submit to Ecology 30 days prior to start of construction	Combine with Spill Control Plan in one document submitted according to SWPPP due date. The Spill Control Plan would be an attachment to the SWPPP.
Solid Waste Control Plan	Submit to Ecology no later than July 15, 2006	The Interim Action for Levee Zone Cleanup is essentially a solid waste control project. The EDR and Plans and Specifications satisfy this plan requirement, and a separate plan is not necessary for solid wastes. The language may be pertinent to industrial facilities but not to remediation.
Spill Control Plan	Submit to Ecology 30 days following permit issuance	Seems redundant to provision S9.B2 (SWPPP) which calls for Spill Prevention and Emergency Control Plan. We would like to combine this with SWPPP and submit according to SWPPP due date.



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Regional Office • 3190 160th Avenue SE • Bellevue, Washington 98008-5452 • (425) 649-7000

April 27, 2006

Ms. Halah Voges
RETEC Group, Inc.
1011 S. W. Klickitat Way, Suite 207
Seattle, WA 98134-1162

Dear Ms. Voges:

RE: Response to Comments on Draft NPDES Permit No. WA-003212-3
BNSF Railway Company, Skykomish

Thank you for your comments on the above-referenced draft permit. A thorough review has been made of your comments, and we offer the following responses. The following responses are outlined in the same format as presented in your letter.

COMMENTS ON THE FACT SHEET:

- 1, 2, 3. **Pages 1, 4, and header throughout document:** The facility name has been changed to read "BNSF Railway Company" as requested.
4. **Page 6, 3rd paragraph, second line:** The volume of "two million gallons of oil" is a calculated value from the Department's Toxic Cleanup Program.
5. **Page 6, 2nd bullet, 4th line:** The word "extremely" has been deleted from the sentence.
6. **Page 6, 5th bullet, 4th line:** The word "extremely" has been deleted from the sentence.
7. **Page 7:** The title "**Description of Levee Replacement Project which Begins in the Summer of 2006**" has been changed to read "Description of Levee Zone Cleanup Project which Begins in the Summer of 2006."
8. **Page 7:** under the **Description of Levee Replacement Project** section, the 5th line of the first paragraph, the sentence has been changed to read "The in-water portion of the levee work will begin in..."
9. **Page 7:** under the **Description of Levee Replacement Project** section, the 7th line of the 2nd paragraph, the sentence has been clarified to read "water within the first and second cofferdams will be pumped to a containment tank for treatment."

Responses to Comments
Permit No. WA-003212-3
BNSF Railway, Skykomish
Page 2

10. **Page 7: under the Description of Levee Replacement Project** section, the 3rd paragraph has been revised to read as "Upland source control will be implemented to prevent future migration of contaminants into the levee zone following cleanup. Source control will consist of a sheet pile wall used for shoring the southern face of the excavation to form a physical barrier. This work will be overseen by the Department's TCP".
11. **Page 8, Proposed Treatment and Wastewater Management:** The last sentence has been revised to read as "BNSF proposes to operate both treatment trains in parallel if treatment capacity of greater than 500 gpm is required."
12. **Page 9, Table 1 – Wastewater Characterization:** The Department agrees that the one-time-detected concentration for PCBs should not be included in Table 1, and also agrees that an effluent limit for PCBs is not necessary (these changes have been made in the permit and fact sheet). This is because PCBs have been detected only once in groundwater at the site in MW-32 (in 1991), and the well was re-sampled 4 times, as recently as 2002, with no detection of PCBs.
13. **Page 10, Design Flow Criteria:** The Figure number has been changed to read "Figure 5."
14. **Page 14, Whole Effluent Toxicity, the 4th line of the 2nd paragraph:** The Figure number has been changed to read "Figure 2."
15. **Page 15, PCBs effluent limits,** this limit has been removed from the permit and fact sheet due to the reasons stated above in response #12.

In addition to the responses above, the Department has added the following three paragraphs to the **Residential Septic Systems** section on page 8 of the fact sheet, to update the existing information presented in that section.

The Town has hired a firm to develop a combined General Sewer Plan and Facility Plan. The plans contain a determination of the viability of the proposal to use the airfield to accommodate a community sewer system including a drain field, and will identify the type and cost of a system needed to accommodate properties both within the cleanup zone, and the remaining properties in the town. The plan will also include an analysis of additional capacity for future growth. The Facility Plan will include a hydrogeological investigation and evaluation to determine if the proposed use of the perimeter of the airfield is a feasible disposal site adequate for disposal of the daily volume of treated wastewater. If the site is determined to be inadequate, the firm will propose and evaluate another method of effluent disposal.

Upon receiving the Department's approval, a Sewer Construction Design Plan for the community will be developed. The Department has contributed funding for the development of the combined General Sewer Plan and Facility Plan for the town. A King County Community Block Grant may be available for use in the construction phase of the project.

Responses to Comments
Permit No. WA-003212-3
BNSF Railway, Skykomish
Page 3

As part of the cleanup action in the Levee Zone, it will be necessary for individual septic systems to be replaced. Although permitted on a temporary basis, the engineering and design will be consistent with requirements for a typical permanent system. The Department has coordinated with King County to ensure that the temporary on-site septic permits will remain in effect until a permanent system is available for connection, as long as the temporary system is operated as designed and in accordance with the on-site septic permit requirements. Property owners within the cleanup zone are not liable for the cost of site cleanup and thus will not be held responsible for the cost of replacing the septic systems on their property.

COMMENTS ON THE PERMIT:

Response to general comment: You requested that the monitoring and reporting requirements should be relaxed when the system is not operating. In accordance with your request, a sentence has been added in S3.A to read as follows: "If there was no discharge during a given monitoring period, the Permittee is required to submit the form applicable to that period as required with the words "no discharge" entered in the place of the monitoring results." This means that no monitoring is required if there is no discharge. However, reporting is still a requirement of the permit even if there is no discharge.

Specific Comments:

- 1, 2. **Page 1, S1.A, and throughout the document:** The facility name has been changed to read "BNSF Railway Company" as requested.
3. **Page 6:** The **effluent limit for PCBs** has been removed as mentioned in response #12 above.
4. **S1.E Untreated Overflow:** Untreated overflow to surface waters of the state is not allowed except for those unavoidable circumstances such as to prevent loss of life, personal injury, severe physical damage to property, and under conditions in which there is no feasible alternative to the bypass, such as the use of auxiliary treatment facilities, etc... as listed in S4.B. of Operation and Maintenance, Bypass Procedures.
5. **S1.C** has been re-titled to read "**Industrial Stormwater and Construction Dewatering Discharges Associated With Cleanup Zones (Figure 3).**"

As you have requested, the following section has been added to S1 of the permit.

S1.H. Industrial Stormwater Discharge Associated with Railway Operations

Industrial stormwater discharges associated with railyard operations (not related to cleanup activities) are regulated under General Stormwater NPDES Permit No. S03003658, except for those cases in which contaminated water from railyard operations passes through the cleanup site.

Responses to Comments
Permit No. WA-003212-3
BNSF Railway, Skykomish
Page 4

6. **S2.A Monitoring Schedule for All Cleanup Zones:** The analytical method for benzene has been changed to "SW 8260B". The analytical method for Lead and Arsenic has been changed to EPA 200.8. For PAH compounds, the analytical method has been changed to EPA 8270C-HVI. The requirement listed in S2.B which requires the Permittee to follow the latest revision of the Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR 136, has been deleted. The Permittee is required to use the analytical methods as specified in S2.A. The detection limits achieved for those analytical test methods specified in S2.A shall be lower than the effluent limits (or enforcement limits for PAH compounds) listed in S1.C of the permit.

In addition, footnote "b" listed in S1.C for PAHs has been changed to read as follows: "The method detection level (MDL) for these PAH compounds is above the effluent limits using the approved analytical test method EPA 8270C-HVI. The reporting level (RL) for these compounds has been reported as 0.01 µg/L. Therefore, these RLs will be used for assessment of compliance with these effluent limits. These RLs will be referred to as enforcement limits in this permit."

Note that the enforcement limits for PAH compounds have been changed from 0.014 µg/L to 0.01 µg/L.

7. **S2.D Laboratory Accreditation:** The parameters: temperature, settleable solids, and conductivity have been removed from this section since they are not required in the permit.
8. **S3.A Reporting:** The discharge monitoring report forms will be mailed to the Permittee when the permit is ready for issuance.
9. **S3.A Reporting,** second paragraph: Documentation of accreditation for the parameter is not required to be submitted along with the monthly discharge monitoring reports. However, these documents should be made available upon request.
10. **S5. Chitosan Dosage Rate and Operation,** page 15, bullet 1, second line: The sentence has been changed to read "time that the chitosan solution dose rate needs to be changed. The calibration shall be..."
11. **S9. SWPPP for Individual Cleanup Zones Construction Activities:** This section applies to construction activity occurring outside and inside of the excavation area. The first sentence has been changed to read "A SWPPP for construction activity occurring outside and inside of the excavation shall be prepared, implemented and updated to reflect the current stage of construction activity."

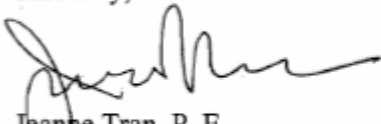
Responses to Comments
Permit No. WA-003212-3
BNSF Railway, Skykomish
Page 5

12. **G22. Reporting Requirements Applicable to Existing Manufacturing, Commercial Mining and Silvicultural Discharges:** The General Conditions in the permit are standard conditions for all the NPDES permits issued by this state. It is the Department's policy not to make any changes to the General Conditions. Since G22 does not apply to BNSF's cleanup activity, it would not have an effect on the facility.

In addition to the responses above, the Department has added Footnote "d" in S1.C in order to ensure that the language is consistent with Chapter 173-201A-30 (1) (c) (vi) for turbidity. Footnote "d" reads as follow: "Turbidity shall not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10% increase in turbidity when the background turbidity is more than 50 NTU."

If you have any questions regarding the above responses or the draft permit and fact sheet, please contact me at (425) 649-7078 or by e-mail: Jtra461@ecy.wa.gov.

Sincerely,



Jeanne Tran, P. E.
Water Quality Engineer

cc: Louise Bardy, TCP
Susan Lee, TCP
Bruce Sheppard, BNSF
Central Files: WQ 1.3